5992 27.

In FIG. 2, the semiconductor chip 25 is connected to these circuits. The circuit patterns are formed also in the metal carrier layer 21, and the BGAs composed of the bumps 26 for connection to the mounting substrate are arranged on the metal carrier layer 21. These bumps 26 are formed by soldering or thermo-compression bonding. The semiconductor device in FIG. 2 has a structure that the carrier is composed of a flexible material. Therefore, the carrier has an effect on the connection to the mounting substrate affected by the thermal expansion difference.

Admitted prior art in FIG. 1

Uses vertical MOSFET with Ball Grid [illegible]

As shown in FIG. 4, a flip-chip semiconductor device 10 has a backing plate 32 which accommodates flip-chip semiconductor dice 20 of differing thicknesses in the same device. As illustrated, the thickness 54B of flip-chip semiconductor die 20B is greater than the thickness 54A of flip-chip semiconductor die 20A. A portion 56 of the first side 34 of the backing plate 32 is formed with a recess 56 to accommodate the thicker flip-chip semiconductor die 20B. The backing plate 32 has a reduced thickness 52B over the recess 56 in comparison to the thickness 52A adjacent flip-chip semiconductor die 20A. Use of the recesses 56 enable the die active surfaces 22 of all flip-chip semiconductor dice 20A, 20B, etc. to be aligned in a substantially coplanar manner. The backing plate 32 may be manipulated by automated machine to align all mounted dice flip-chip semiconductor 20 with the conductor pattern 14 and make all flip-chip electrical bonds therebetween simultaneously.